**C-DEBI Research Small Grants and Fellowships
Request for Proposals**

The NSF Science and Technology Center for Dark Energy Biosphere Investigations (C-DEBI) invites proposals for 1-year research projects (in the anticipated range of $50,000-$80,000) and 1-2 year graduate student and postdoctoral fellowships that will significantly advance C-DEBI's central research agenda: to investigate the subseafloor biosphere deep in marine sediment and oceanic crust, and to conduct multi-disciplinary studies to develop an integrated understanding of subseafloor microbial life at the molecular, cellular, and ecosystem scales. C-DEBI's research agenda balances exploration-based discovery, hypothesis testing, data integration and synthesis, and systems-based modeling. **C-DEBI welcomes proposals from applicants who would enhance diversity in C-DEBI and STEM fields.** This request for proposals is open to all interested researchers at US institutions able to receive NSF funding as a subaward.

**C-DEBI Research Themes**

C-DEBI seeks to support marine deep biosphere research concerning life in marine sediments and volcanic ocean crust. There are [three central research themes](http://www.darkenergybiosphere.org/research-activities/research-themes/):

1. *Fluxes, Connectivity, and Energy* centers on subseafloor environmental conditions and processes

2. *Activities, Communities, and Ecosystems* emphasizes resident microbial communities

3. *Metabolism, Survival, and Adaptation* concentrates on the actions and traits of individual microbe species

Although proposals are not limited to these areas, successful proposals will clearly state how they will advance knowledge within these themes. C-DEBI also seeks to integrate across these themes and encourages knowledge transfer and collaboration between laboratories and institutions, and projects that emphasize synthesis of results from multiple settings or using a variety of tools.

**Program Objective**

C‐DEBI supports research activities related to life in the deep subseafloor biosphere, including field, laboratory, and theoretical studies. C‐DEBI encourages microbiological investigation and studies of biogeochemical processes in the deep subsurface, including the timely analysis of perishable samples, experiments with live samples, and refining or adapting difficult techniques. C-DEBI also encourages basic research on biogeochemical processes that will lead to better understanding of subsurface microbial activities, and marine hydrogeological studies performed in the context of C-DEBI research themes.

**Proposal Parameters**

Proposed projects should be innovative and aim to address fundamental research questions and/or help to develop new hypotheses and goals for future studies of the deep sub‐seafloor biosphere. Successful proposals will clearly articulate the relevance of proposed research to C-DEBI research themes, indicate sources of samples (where necessary), and describe the qualifications of the applicant(s). Entrainment of new researchers not previously funded by C-DEBI will be a consideration in the decision process. See the Review Process section below for additional review details. Applicants are encouraged to see which [research projects have been funded by C-DEBI in the past](http://www.darkenergybiosphere.org/research-activities/research-support/funded-projects/).

Proposals will be considered for field (expedition) projects and shore‐based investigations. Proposed research can also focus on theoretical and experimental deep biosphere studies in a broader sense, which might include, for example, testing novel techniques for deep biosphere research, lab‐based experiments with deep biosphere organisms, model development and testing, and metabolic studies of growth under deep subsurface conditions. Fundamental studies of microbial metabolism that can be applied to subsurface conditions will also be considered. In all cases, successful applicants will make clear the connections between theproposed work and the deep subseafloor biosphere.

***Applicants for C‐DEBI support are responsible for securing access to all samples and data needed to complete the proposed work, and should provide evidence of this access in the proposal.*** C-DEBI supports research that leverages [expeditions of opportunity](http://www.darkenergybiosphere.org/research-activities/field-sites/#1473699806535-4dc5e8c2-87f8). Applicants who wish to use samples or data from IODP expeditions or other field programs must ensure that the proposed work does not conflict with existing expedition‐related projects. In cases where samples from field programs are needed, applicants should contact expedition leaders and shipboard scientists, securing agreement for sample and/or data access, before submitting a proposal to C-DEBI. *Receiving research support from C‐DEBI does not guarantee access to samples or data that are not available to the community at large.* For example, there is a moratorium period of one year for members of an IODP expedition science party to conduct drilling project‐related research before core samples and data are made available to the general scientific community. If working with IODP samples and/or data, applicants should complete the [C-DEBI IODP Sample and Data Access Form](http://www.darkenergybiosphere.org/wp-content/uploads/docs/C-DEBI_IODP%20Sample%20and%20Data%20Access%20Form.docx). For more information including the IODP Sample, Data and Obligations Policy, see the [IODP Data and Sample Access website](http://www.iodp.org/resources/access-data-and-samples).

**Application and Submission**

*Research proposals* should include an [institutional letter of intent confirming that the institution can receive subawards from NSF](http://www.darkenergybiosphere.org/research-activities/research-support/grant-program-faq/#what-is-the-source-of-c-debi-funding-am-i-eligible), a title, a short project summary of ≤200 words written for a broad audience, a project description including figures and tables of not more than 5 pages (font size ≥11 pt) including a brief plan for making data public and accessible in accordance with the [C-DEBI Data Management Plan](http://www.darkenergybiosphere.org/wp-content/uploads/docs/C-DEBIDataManagementPlan_2015.pdf), a separate bibliographic reference section, a detailed budget and budget justification including institutional overhead, [NSF‐style 2‐page CVs](http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_2.jsp#IIC2f) of all participating researchers, and (if applicable) the [C-DEBI IODP Sample and Data Access Form](http://www.darkenergybiosphere.org/wp-content/uploads/docs/C-DEBI_IODP%20Sample%20and%20Data%20Access%20Form.docx). *Postdoctoral researchers are not eligible to be PI on research grants, however we encourage them to apply for the Postdoctoral Fellowships described below.*

In rare cases, we will consider awarding up to an additional $20,000 for research proposals, raising the total C-DEBI award limit to $100,000. Proposals requesting this additional amount must submit a separate explanation as to why additional funding is needed to complete proposed work (≤2 pages), with a separate budget and budget justification for the additional $20,000, indicating why the additional funding is essential and explaining how it would be used.

*Graduate Student and Postdoctoral Fellowship proposals* should include an [institutional letter of intent](http://www.darkenergybiosphere.org/research-activities/research-support/grant-program-faq/#what-is-the-source-of-c-debi-funding-am-i-eligible) confirming that the institution can receive subawards from NSF, a title, a short project summary of ≤200 words written for a broad audience, a project description including figures and tables of not more than 5 pages (font size ≥11 pt) including a broader impacts statement, a brief plan for making data public and accessible in accordance with the [C-DEBI Data Management Plan](http://www.darkenergybiosphere.org/wp-content/uploads/docs/C-DEBIDataManagementPlan_2015.pdf), a proposal implementation statement (graduate fellowships only), a separate bibliographic reference section, a detailed budget and budget justification including institutional overhead, a [NSF-style 2-page CV](http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_2.jsp#IIC2f), a recommendation from the anticipated fellowship advisor, a second faculty recommendation (graduate fellowships only), the names of 3 references (postdoctoral fellowships only), and (if applicable) the [C-DEBI IODP Sample and Data Access Form](http://www.darkenergybiosphere.org/wp-content/uploads/docs/C-DEBI_IODP%20Sample%20and%20Data%20Access%20Form.docx). Please see the fellowship guidelines for details on the [graduate student and postdoctoral fellowship program](http://www.darkenergybiosphere.org/research-activities/research-support/fellowships/) including submission and budget requirements.

Please submit proposals **as a single PDF** via our [online submission form](http://www.darkenergybiosphere.org/forms/fall-2016-rfp-research/). **The deadline for this call is 1 December 2016.**

**Review Process**

Please see the detailed [Grants Programs FAQs](http://www.darkenergybiosphere.org/research-activities/research-support/grant-program-faq/) to learn how C-DEBI proposals are reviewed. Successful proposals will be: thoughtfully conceived, carefully organized, clearly written, relevant to C-DEBI themes, highly impactful, and tractable given the budget and schedule. We anticipate making decisions on funding by 1 February 2017, with successful proposals starting 1 April 2017.

**Contact Information**

For questions regarding the scientific scope of this call, please contact:
Julie Huber (jhuber@mbl.edu), C-DEBI Associate Director

Questions regarding the data management plan can be addressed to:
John Heidelberg (jheidelb@usc.edu), C-DEBI Data Management Director

Questions regarding the fellowships broader impacts statement can be addressed to:
Stephanie Schroeder (slschroe@usc.edu), C-DEBI Education Director

Questions regarding proposal submission can be addressed to:
Rosalynn Sylvan (rosalyyl@usc.edu), C-DEBI Managing Director